

70 EPDM 38596



The new white high-performance material 70 EPDM 38596 from Freudenberg Sealing Technologies has been developed especially to meet the high demands of the process industry. The material is extremely well suited for manufacturing O-rings and sealing rings with simple cross-sections. It not only has excellent mechanical

properties, but also very good resistance to standard cleaning media and steam, as shown in the following diagrams. It is particularly well suited for contact with aqueous products and dairy products with a low-fat content. The very low extractables values are also an advantage that the material 70 EPDM 38596 offers.

MATERIAL OVERVIEW

MATERIAL PROPERTIES				CONFORMITIES / APPROVALS		
MATERIAL	COLOR	CROSS LINKING	PROPERTIES AND ADVANTAGES	EU (REG.) 1935/2004	EU (REG.) 2023/2006	FDA USP CHAPTER 87 (IN VITRO)
70 EPDM 38596	white	peroxidic	<ul style="list-style-type: none"> • Very good material for O-rings and sealing rings with simple cross-sections • Excellent mechanical properties • Very good resistance to standard cleaning media • Excellent temperature resistance in steam (up to +160 °C) • Very low extractables values 	●	●	●
				CURRENTLY UNDER REVIEW AVAILABLE IN 2022		

EXTRACTABLES STUDY

The topic of purity plays an important role in the production of food and pharmaceuticals. But how do you guarantee the necessary process purity with regard to sealing materials? This is where extractables and leachables studies come into play in addition to the usual release tests, because they pursue a common goal: to ensure and verify process purity. An extractables study provides insights into the interactions between the product and the elastomer. The purpose of such a study is to identify all possible extractable components of the elastomer that can migrate out of elastomeric sealing materials during the production, filling and packaging of food and pharmaceuticals. Freudenberg Sealing Technologies has already conducted an extractables study to determine whether the new material 70 EPDM 38596 meets the high purity requirements in the process industry. Furthermore, the study included a benchmark with comparable white EPDM compounds from competitors. As can be seen in **Figure 1** on the right, the new white EPDM from Freudenberg Sealing Technologies has very low extractables values compared to competitors' white EPDM compounds and is therefore suited for all applications where maximum cleanliness is important.

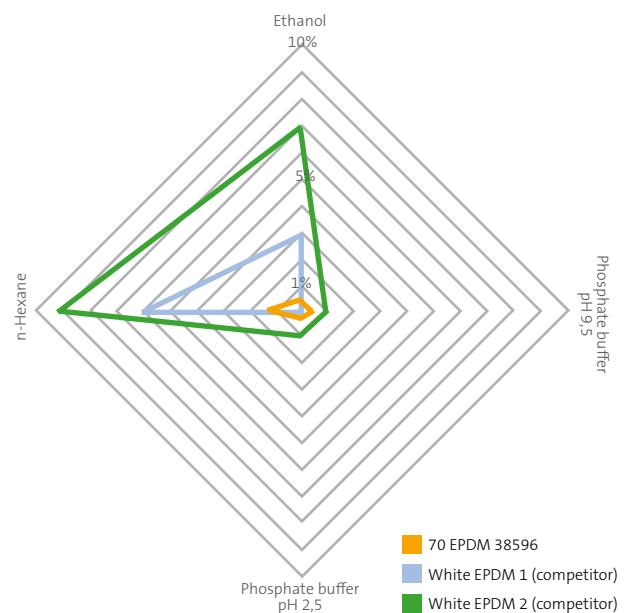


Fig. 1: Extractables study including the benchmark (Extractables in % based on the weight of the test specimen)

CIP/SIP RESISTANCE

CIP/SIP processes place high requirements on seals. Every technical process system, regardless of whether it is used to produce pharmaceuticals or to fill beverages, must be cleaned regularly and before every product change. This prevents risks such as product contamination and contamination by microorganisms. CIP/SIP cleaning processes place high demands on seals in pipelines, pumps and valves. Increasingly aggressive chemical cleaning agents are used to eliminate organisms and contamination in the shortest possible time. On top of this comes sterilization with steam, which puts further stress on the seals due to the ever-increasing steam temperatures and pressures. To meet the high demands of pharmaceutical and food processing systems, it is therefore

essential to use sealing materials that are precisely matched to the respective conditions. To ensure that this is also the case for the material 70 EPDM 38596, meaningful sealing tests were carried out on all common CIP/SIP media and in steam and hot water sterilization. Based on the results of mechanical tests, key material properties, such as the change in mass, volume, elongation at break and tensile strength, were evaluated and classified before and after storage. The results (see Figure 2) show that the new material 70 EPDM 38596 from Freudenberg Sealing Technologies meets the demanding criteria and exhibits similar to very good comparable resistance overall to the very proven black material 70 EPDM 291.

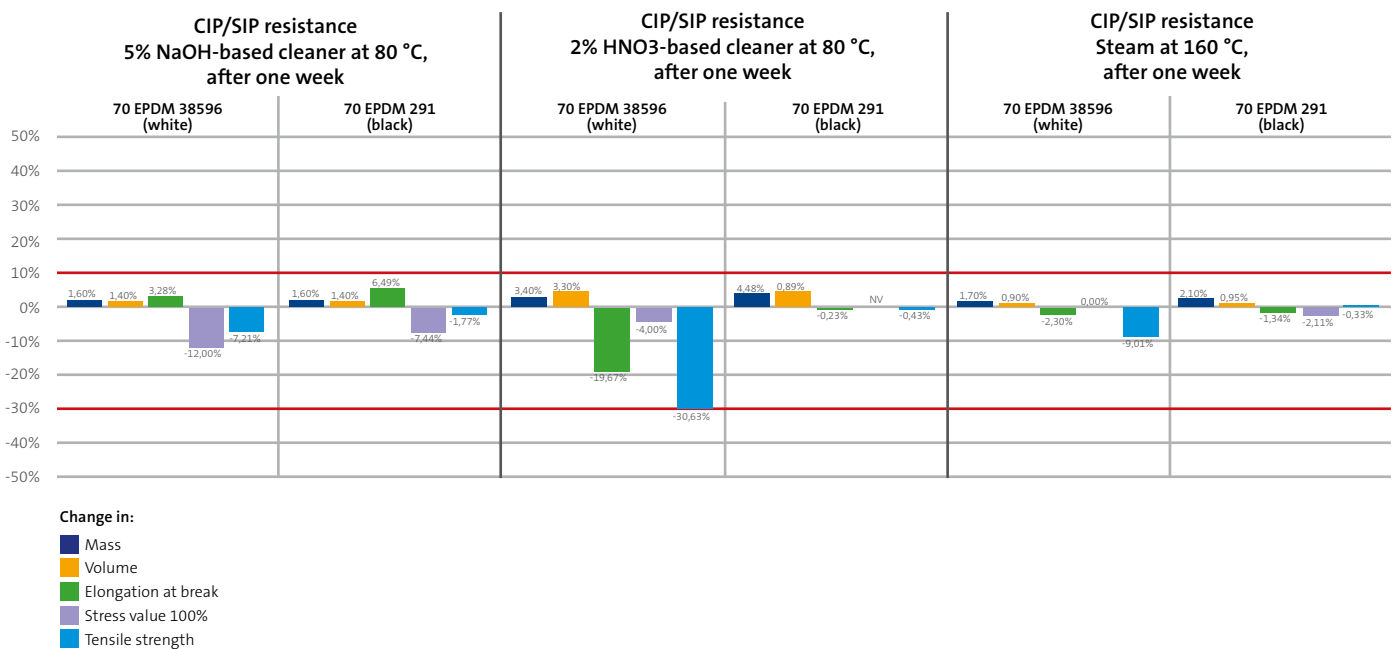


Fig. 2: CIP/SIP resistance tests

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